



Thawing of permafrost may disturb historic cattle burial grounds in East Siberia

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Abstract:

Climate warming in the Arctic may increase the risk of zoonoses due to expansion of vector habitats, improved chances of vector survival during winter, and permafrost degradation. Monitoring of soil temperatures at Siberian cryology control stations since 1970 showed correlations between air temperatures and the depth of permafrost layer that thawed during summer season. Between 1900s and 1980s, the temperature of surface layer of permafrost increased by 2-4 degrees C; and a further increase of 3 degrees C is expected. Frequent outbreaks of anthrax caused death of 1.5 million deer in Russian North between 1897 and 1925. Anthrax among people or cattle has been reported in 29,000 settlements of the Russian North, including more than 200 Yakutia settlements, which are located near the burial grounds of cattle that died from anthrax. Statistically significant positive trends in annual average temperatures were established in 8 out of 17 administrative districts of Yakutia for which sufficient meteorological data were available. At present, it is not known whether further warming of the permafrost will lead to the release of viable anthrax organisms. Nevertheless, we suggest that it would be prudent to undertake careful monitoring of permafrost conditions in all areas where an anthrax outbreak had occurred in the past.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222928>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Glacier/Snow Melt, Temperature

Temperature: Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Arctic

Geographic Location:

resource focuses on specific location

Non-United States

Climate Change and Human Health Literature Portal

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Russia

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Zoonotic Disease

Zoonotic Disease: Anthrax

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified